CLAIMS

What is claimed is:

1. A method of creating a packet using a digital signal processor, the method comprising the steps of:

receiving call set-up information;

receiving call data;

creating a data portion of the packet using the call data;

creating one or more headers using the call data and the call set-up information; and

creating the packet by attaching the one or more headers to the data portion of the packet.

2. The method as recited in claim 1, further comprising the step of updating at least one of the headers based on a change in the call data or network topology.

3. The method as recited in claim 1, further comprising the step of transmitting the packet to a switch fabric.

4. The method as recited in claim 1, wherein the one or more headers comprise a real time transport protocol header.

5. The method as recited in claim 4, wherein the real time transport protocol header is determined by the call data.

6. The method as recited in claim 1, wherein the one or more headers comprise a user datagram protocol header.

7. The method as recited in claim 6, wherein the user datagram protocol header is determined by the call data.

8. The method as recited in claim 1, wherein the one or more headers comprise an Internet protocol header.

9. The method as recited in claim 8, wherein the Internet protocol header is created from the call set-up information.

10. The method as recited in claim 1, wherein the one or more headers comprise a media access control header.

11. The method as recited in claim 10, wherein the media access control header is created from the call set-up information.

12. The method as recited in claim 1, wherein the step of creating a data portion of the packet using the call data comprises the steps of:

compressing the call data;

creating one or more digital samples from the compressed call data; and

creating the data portion of the packet using the one or more digital samples.

13. The method as recited in claim 1, further comprising the steps of:

requesting an overlay based on the call set-up information; and

receiving and loading the overlay.

14. An apparatus comprising:

an array of digital signal processors;

each digital signal processor programmed to receive call set-up information, receive call data, create a data portion of a packet using the call data, create one or more headers using the call data and the call set-up information, and create the packet by attaching the one or more headers to the data portion of the packet.

15. The apparatus as recited in claim 14, wherein the one or more headers comprise a real time transport protocol header.

16. The apparatus as recited in claim 15, wherein the real time transport protocol header is determined by call data.

17. The apparatus as recited in claim 14, wherein the one or more headers comprise a user datagram protocol header.

18. The apparatus as recited in claim 17, wherein the user datagram protocol header is determined by the call data.

19. The apparatus as recited in claim 14, wherein the one or more headers comprise an Internet protocol header.

20. The apparatus as recited in claim 19, wherein the Internet protocol header is created from the call set-up information.

21. The apparatus as recited in claim 14, wherein the one or more headers comprise a media access control header.

22. The apparatus as recited in claim 21, wherein the media access control header is created from the call set-up information.

23. The apparatus as recited in claim 14, wherein each digital signal processor creates a data portion of the packet using the call data by compressing the call data, creating one or more digital samples from the compressed call data, and creating the data portion of the packet using the one or more digital samples.

24. The apparatus as recited in claim 14, wherein each digital signal processor is further programmed to request an overlay based on the call set-up information, and receive and load the overlay.

25. The apparatus as recited in claim 14, wherein each digital signal processor is further programmed to update at least one of the headers based on a change in the call data or network topology.

26. A communications switch comprising:

one or more cards having ingress, signal processing and egress functions, wherein the signal processing function comprises one or more arrays of digital signal processors, each digital signal processor programmed to receive call set-up information, receive call data, create a data portion of a packet using the call data, create one or more headers using the call data and the call set-up information, and create the packet by attaching the one or more headers to the data portion of the packet;

one or more control cards containing one or more processors;

a switch fabric communicably coupling the one or more cards and the control cards; and

a TDM bus communicably coupling the one or more cards and the control cards.

27. The communications switch as recited in claim 26, wherein one or more ingress cards communicably coupled to the switch fabric and the TDM bus provide the ingress function of the one or more cards.

28. The communications switch as recited in claim 26, wherein one or more egress cards communicably coupled to the switch fabric and the TDM bus provide the egress function of the one or more cards.

29. The communications switch as recited in claim 26, wherein one or more signal processing cards communicably coupled to the switch fabric and the TDM bus provide the signal processing function of the one or more cards.

30. The communications switch as recited in claim 26, wherein each digital signal processor is further programmed to request an overlay based on the call set-up information, and receive and load the overlay.

31. The communications switch as recited in claim 26, wherein the one or more headers comprise a real time transport protocol header.

32. The communications switch as recited in claim 31, wherein the real time transport protocol header is determined by the call data.

33. The communications switch as recited in claim 26, wherein the one or more headers comprise a user datagram protocol header.

34. The communications switch as recited in claim 33, wherein the user datagram protocol header is determined by the call data.

35. The communications switch as recited in claim 26, wherein the one or more headers comprise an Internet protocol header.

36. The communications switch as recited in claim 31, wherein the Internet protocol header is created from the call set-up information.

37. The communications switch as recited in claim 26, wherein the one or more headers comprise a media access control header.

38. The communications switch as recited in claim 33, wherein the media access control header is created from the call set-up information.

39. The communications switch as recited in claim 26, wherein each digital signal processor creates a data portion of the packet using the call data by compressing the call data, creating one or more digital samples from the compressed call data, and creating the data portion of the packet using the one or more digital samples.

40. The communications switch as recited in claim 26, wherein each digital signal processor updates at least one of the headers based on a change in the call data or network topology.